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A.D. 1870, 18th April. N° 1126.

Shaping Plastic Materials.

LETTERS PATENT to William Fullarton Murray, Potter, and Thomas Duncan McFarlane, Machinist, both of Glasgow, in the County of Lanark, North Britain, for the Invention of "IMPROVEMENTS IN APPARATUS FOR SHAPING PLASTIC MATERIALS."

Sealed the 14th October 1870, and dated the 18th April 1870.

(Void by reason of the Patentees having neglected to file a Specification in pursuance of the conditions of the Letters Patent.)

PROVISIONAL SPECIFICATION left by the said William Fullarton Murray and Thomas Duncan McFarlane at the Office of the Commissioners of Patents, with their Petition, on the 18th April 1870.

We, WILLIAM FULLARTON MURRAY, Potter, and THOMAS DUNCAN MCFARLANE, Machinist, both of Glasgow, in the County of Lanark, North Britain, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN APPARATUS FOR SHAPING PLASTIC MATERIALS," to be as follows, that is to say:—

This Invention has principally for its object the adaptation of apparatus for shaping plastic materials into certain comparatively difficult forms so as to dispense, to a certain extent, with the skilled labor hitherto required and so as to produce the articles in a rapid and economical manner. Earthenware bottles are of the class of articles for which the improved apparatus is more particularly designed, and it may be modified to suit various similar forms in which the mouth or opening is more or less contracted as compared with the interior of the article. Some of the improved arrrangements are however also applicable for shaping ordinary and other forms.

The improved apparatus, as adapted for shaping bottles, comprises a mould of an internal configuration corresponding to the external shape of the bottom and lower cylindrical portion of the bottle. This mould may be of the ordinary kind, or it may be made in two or more parts arranged to be easily separated for the removal of each bottle as soon as formed, and it is mounted on a potter's wheel or equivalent apparatus by which it is made to rotate about a vertical axis. A lump of the clay or plastic material out of which the bottle is to be formed is put into the mould, and an internal shaping scraper which does not rotate is moved gradually down, being upon a vertical spindle accurately guided in a bracket above. This internal scraper shapes the lower part of the interior of the bottle, spreading the clay up the sides of the mould and causing it to rise tube-like above the top of the mould. The top of the mould corresponds or nearly so with the level of the bottle, where it begins to contract to form the neck. When the sides are sufficiently shaped by the internal scraper it is raised up out of the way and an external shaping scraper of a suitable shape and fixed on a slide or on a joint is moved or turned inwards and causes the projecting clay to take the desired contracted form for the neck, at the same time that an internal neck shaper comes into action inside of the neck to regulate the thickness of the clay. The internal neck shaper is a suitably bent metal rod or wire fixed on a spindle in such a way that it can be withdrawn from the bottle by turning the spindle, the spindle having on it a pinion with which there gears a sliding rack whereby the requisite movement is effected. The extreme end of the neck may be shaped by scrapers separate from those which shape the other part of the neck. In cases where the body of the bottle or article is of a bulging form the internal shaping scraper first introduced is to be made with jointed or movable pieces, arranged to be drawn inwards on withdrawing the scraper. In some cases the mould may be wholly or partially dispensed with, the sides being shaped by means of internal and external scrapers acting

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together and suitably shaped and guided for producing the desired form.

One machine or framing may be fitted with two or more sets of the parts for the purpose of forming two or more articles simultaneously, and the several sets of parts may be actuated by a single set of cams or equivalent parts.

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